

**APPENDIX 4-A****STORAGE OF TUNGSTEN METAL POWDER  
(Carbon Reduced)**

1. *Description.* Tungsten metal powder is a dark gray, very heavy, metallic appearing material that is of a very fine particle size. When acquired, tungsten metal shall meet Purchase Specification P-102-R1 (Current Edition).
2. *Packaging.* New receipts will be packed in polyethylene bags which have been inserted in either 15-gallon or 30-gallon capacity, 16-gauge, steel drums, hot-dipped galvanized after fabrication, conforming to the requirements of National Stockpile Container Specification C-1 (latest revision), Drums: Steel, Hot-Dip, Galvanized. The 15-gallon size drums will weigh approximately 1,000 pounds each, and the 30-gallon size will weigh approximately 2,000 pounds each.
3. *Marking*
  - a. Prior to receipt, each container will be marked to show the following information:
    - (1) Name of Product
    - (2) Name of Producer
    - (3) Type
    - (4) Date Packed (Month and Year)
    - (5) Gross and Net Weights
    - (6) Government Contract Number
    - (7) Lot Number and Drum Serial (e.g., 1/20, 2/20, etc.)
    - (8) "KEEP AIRTIGHT"
  - b. Drums shall be marked by means of metal tags attached to the clamp ring bolt, embossed with the above information, or by stenciling the information on the side and top of the drum. If tags are used, a duplicate tag shall be placed inside the drum, and the notice "Duplicate Tag Inside Drum" embossed on the outside tag.
  - c. Identification of material shall be obtained from information shown on documents accompanying each shipment, and on shipping instructions issued by the DNSC-OL. The DNSC-OL shall be notified immediately if shipments are received prior to receipt of identifying documents, if containers are received without identifying markings, or if the markings on the containers are not in agreement with those shown on the documents and/or shipping instructions.

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a. All drums shall be stored in warehouse space. The first tier of drums shall be placed on floor pallets in upright position after which one-inch thick random length and width hardwood dunnage lumber shall be used between each succeeding tier. If the use of dunnage lumber between tiers is not practicable because of weight of containers, or difficulty in handling, pallets between tiers may be used. Storage identity shall be maintained by contract number and lot number, as indicated on each container and in shipping instructions. Complete description of each lot shall be indicated on a card which shall be prominently displayed and securely attached to each lot in the stack. DLA-DNSC depots will use the Warehouse Material Identification Card, DNSC Form 41, for this purpose. The forms, which are specifically designed for use with Stockpile material, will be furnished to military depots upon request.

b. The drums shall be stored in uniform rows and tiers so as to facilitate the taking of an inventory at any time by counting the rows and tiers and computing the total quantity. In doing this, however, economical use of space must be given full consideration, and all segregation requirements must be met. When pallets are used, a uniform number of drums shall be placed on each pallet, except when an odd number on the top pallet of a stack of uniform height will complete the lot.

c. Main transportation aisles will be wide enough to permit efficient operation of local material handling equipment.

**5. Precautions To Be Taken**

a. *Health.* If handling this material directly wear approved respiratory and personal protective equipment.

b. *General*

(1) Keep sparks and flames away from the drums since this is a very fine powder, and when mixed with air, the inherent hazard of explosion is present.

(2) The powder is treated with inert gas to minimize oxidation during long-term storage. Therefore, all drums must be handled with special care to prevent injury which would permit gases to escape. If drums are received in a damaged condition or are injured in handling, repackaging must not be undertaken without contacting the DNSC-OL.

(3) Rough handling may cause extensive damage to the galvanized coating on the drums. When discovered, all abrasions and/or scratches shall be coated with a zinc base paint prior to placement of drums in permanent storage. Proper care shall be exercised in handling drums in

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order to avoid damage. Upon receipt, drums should be carefully checked to insure that the lids are securely fastened.

6. *Average Storage Factor.* 8 square feet per short ton.

**Metal Powder Shipment Procedures**

1. You need to visually inspect and document that the drums are *okay* for shipment. This should be a separate report (found at the end of the manual) to be kept on file to be accomplished by operations personnel on site. This report does not go with the truck and can obtain from DNSC-OL. For drums that do not pass visual inspection and are impaired such that they may be likely to release material during transport set these drums in a separate area and ensures these drums are not given to purchaser.
2. The shipment must be transported as a bulk shipment in compliance with 49 CFR 173.240(a) or (b) as a sift-proof, closed vehicle or sift-proof closed car. Sift-proof, closed vehicle or car will act as the package. The drums will meet the sift-proof requirement for the vehicle. All paper work that accompanies the truck or car must indicate the gross weight of the material being shipped with no reference to the number of drums. Immediately after shipment a weight certificate will be faxed to the purchaser indicating net, gross, and drum count. **This Wt Cert. will not go with the truck or railcar.**
3. The requirement that the drums being properly labeled prior to shipment is no longer necessary. Since the shipment is being transported as a bulk shipment, drum labels are not needed.
4. Flat beds cannot be used for shipments, must be closed van or box car.
5. The purchaser will be the shipper *of record*. Though the DOT regulations also identify us as an “offeror” of this material (since we have made the DOT classification determination and performed the packaging function), we still require the purchaser or his representative to sign the shipping papers as well as placard the conveyance, except for rail cars shipments we will do the placarding.
6. Conveyance (trailer/rail car) must be for exclusive use for the material being shipped. This should be annotated on the bills of lading and conveyed to the dispatcher when arranging for shipments.
7. The appropriate DOT information associated with this shipments is as follows:

**For a bulk shipment per 49 CFR 173.240(b)**

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Proper Shipping Name:	Metal Powder Flammable N.O.S.
Hazard Class:	Flammable Solid, 4.1
I.D. Number:	UN3089
Markings/Placarding:	The closed transport vehicle must be marked using the identification numbers "3089" in an orange rectangular panel per 172.332(b) and placarded with the Flammable Solid placard per 172.504, <u>or</u> the UN numbers of "3089" should be on the Flammable Solid placard per 172.332(d).
Labeling:	None
Packaging:	Per 173.240(a) or (b), in a sift-proof, closed Vehicle or rail car
Reportable Quantity (RQ):	No
Marine Pollutant (MP):	No
Shipping Paper Description:	Metal Powder Flammable N.O.S., 4.1, UN3089, PGII 1 truck load or car load, XXX lbs. (Total gross weight of Metal Powder and drums being shipped); MSDS and/or Emergency Response Guide 170 should be attached to the shipping paper

Emergency Response Phone number.

8 As of this date no overseas shipments are permitted. The packaging of this material does not meet overseas requirements. You can ship this material to a stateside port, but no reference to the material being shipped overseas can be on the paperwork sent with the driver.

FOR ADDITIONAL INFORMATION ON THIS COMMODITY REFER TO THE MATERIAL SAFETY DATA SHEET OR THE MOST RECENT PURCHASE SPECIFICATION.